

Work Order ID 127272 - 1

Wednesday, December 17, 2014 7:45:40 AM

127272

DAS 9 9:00 release low A.

Page 1

Item ID: D6021-125 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: ~~Prelim~~ Stop ***NS2***
 Item Name: Crosstube Material - 17-4Ph SS
 Start Date: 4/30/2015 Start Qty: 50.00 ***50*** Cust Item ID:
 Required Date: 4/30/2015 Req'd Qty: 50.00 ***50*** Customer:
 Reference:

Approvals: Process Plan: CR Date: 12/12/17 Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
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100		0.00							
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100 PURCHASING
 Purchasing Memo 0.00
 Purchasing Issue P/O: 24911 Description: 17-4PH H1100 seamless Stainless steel Tube, per ASTM A564 2.378" OD X 2.00" ID X 125" Long)
 Min. Ultimate Tensile Strength = 140ksi
 Min. Yield Tensile Strength = 115ksi
 Tolerance on all dimensions are as per Dwg D6021 Rev. PA1 and ASTM A519
 Possible Supplier: Siderval
 Material certification required

110	Receive & Inspect for Damage & Mat'l Certs	0.00							
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110
 Packaging Memo 0.00
 Packaging Ensure material certification is attached

CR 12/12/17 50

38 15104110
split at 6

Work Order ID 127272

Wednesday, December 17, 2014 7:45:40 AM

127272

Page 2

Item ID: D6021-125 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Prelim Stop ***NS2***
 Item Name: Crosstube Material - 17-4Ph SS
 Start Date: 4/30/2015 Start Qty: 50.00 ***50*** Cust Item ID:
 Required Date: 4/30/2015 Req'd Qty: 50.00 ***50*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC6- Inspect dimensions to drawing	0.00							
120	<i>AS per Rev A</i>								
QC	Memo <i>PD</i>	0.00				<u>(38)</u>	<u>15-04-13</u>		DAS 9 9-89
Quality Control									
130	Identify as per dwg & Stock Location: <u>L/G</u>	0.00							
130									
Packaging	Memo	0.00				<u>1</u>	<u>Ø</u>		
Packaging									
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.00				<u>MLJ</u>	<u>15-04-20</u>		<i>mmml</i> <i>15/04/014</i>
Quality Control									

POSITIVE RECALL

EFFECTIVE

AUTH

RELEASED

DATE

DAS
9
9-89

Release
Rev A

Wednesday, December 17, 2014 7:45:40 AM

Page 1

127272

D6021-125

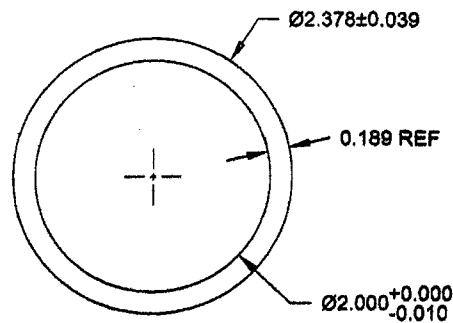
Required Date: 4/30/2015

Required Qty: 50.00

Comments: new issue - prelim LL 12.05.04

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6021-125P		Purchased	No				Each	0.0000		50	38		
D6021-125P									**		28x	SP15-01-06	
Crosstube Material - 17-4PH													

SPECIFICATION CONTROL DRAWING



NOTES

- 1) D8021-XXX CROSSTUBE
LENGTH

WHERE XXX IS LENGTH IN INCHES
EG. 126" LONG TUBE: D8021-126

- 2) MATERIAL: 17-4PH SEAMLESS STAINLESS STEEL TUBE PER ASTM A664
Ø2.378 O.D. x Ø2.000 I.D.

HEAT TREAT TO H1026 (HRc 34-42):
MIN. ULTIMATE TENSILE STRENGTH = 165 ksi
MIN. YIELD TENSILE STRENGTH = 145 ksi

- 3) TOLERANCES ARE AS FOLLOWS:
ECCENTRICITY: 10% (+/-0.018" WALL)
LENGTH: XXX +0.600"/-0.000"
STRAIGHTNESS: 0.012" DEVIATION / 12" LENGTH

- 4) ALL DIMENSIONS ARE IN INCHES
5) TUBE MUST BE PICKLED OR ELECTROPOLISHED TO BE SMOOTH AND FREE FROM SCALE.
6) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.006" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.

RELEASE

2015 MAR 18

4P EN 15-547

REV.	NEW ISSUE	DESCRIPTION	CP	15.01.20
DESIGN			BY	DATE
DRAWN				
CHECKED				
MFG. APPR.				
APPROVED				
DE APPR.				
DATE	15.01.20			

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		REV. A
DRAWING NO. D8021	SHEET 1 OF 1	
TITLE CROSSTUBE MATERIAL	SCALE NTS	

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Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PO REPRINT

Purchase Order ID PO24911

Purchase Order Date 7/8/2014

PO Print Date 7/10/2014

Page Number 1 of 2

Order From:

WIRE HOLLOW INTERNATIONAL
19 ENTERPRISE DRIVE SUITE 2

WINDHAM, MAINE 04062
UNITED STATES

VU-TH01

Ship To:

DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone 207-892-8899

Ship To Contact

Ship To Phone

Ship Via

Journey Freight collect

Ship Acc

Buyer

Michael Gregoire

Customer POID

Customer Tax # 10127-2607

Terms

Net 30

Currency

USD

FOB

EXW - (Ex Works)

Reference	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req. Qty/ Unit of Measure	PO Unit Price	Ext
Vendor Part Number						
Line Comments						
Delivery Comments						
D6021-125P	Crosstube Material - 17- 4PH	11/20/2014 Yes 11/20/2014		50.00 Each	\$2,306.25	\$11
Manufacture as per Drawing D6021 Rev.PA5 B127271						
reced 151 SP14-12-18 reced 30x SP15-01-14						
Line Total:						\$11
D6021-125P	Crosstube Material - 17- 4PH	4/20/2015 Yes 4/20/2015		50.00 Each	\$2,306.25	\$11
Manufacture as per Drawing D6021 Rev.PA5 B127272						
reced 28x SP15-04-16						
Line Total:						\$11

NOTE

Final delivery date may be pulled in as required. April delivery is latest ship date allowed as stated in proposal#14083.1

Note:

7/10/2014

TRANSPORT Bourassa INC.

NIR: R-505500-0

800, rue de Dijon, Saint-Jean-sur-Richelieu
Québec, CANADA J3B 8G3 • www.bourassa.ca



NO FACTURE / PRO NO.

1844797

Saint-Jean: (450) 346-5313 • Montréal: (514) 879-1304
CANADA - USA: 1-800-363-9254 • Fax: (450) 346-5150

DATE MAR 31/2015	CONNAISSANCEMENT / B/L PB20046243	NO UNITÉ P.U. 3821664	NO UNITÉ LIV.	JCTN	TRANSFÉRÉ À - TRANSFER TO	NO. PRO	TRANSPORT - BEYOND % \$
TUNE HOLLAND INTERNATIONAL 19 ENTERPRISE DRIVE #2 WILLOWHAM, ON M4A 6B2				DART ACCORDANCE 1270 ABERDEEN ST HAVERHURST, ON M6A 1K7			

NBRE PIÈCES NO PIECES	DESCRIPTION	POIDS WEIGHT	TAUX RATE	TRANSPORT
2	BOITE(S) PO: # 24911 Dim: 2 - 131"X16"X15" Votre # reference: PB20046243 Horaire pour Paques: Ferme Vendredi 3 Ne ferme pas Information obtenue de:	2200 LBS		PPD

IL EST ENTENDU ENTRE LES PARTIES AUX PRÉSENTES QU'UN TAUX D'INTÉRÊT ANNUEL DE 24% SERA IMPUTÉ SUR TOUTE FACTURE IMPAYÉE DANS LES TRENTÉ (30) JOURS DE LA LIVRAISON DE LA MARCHANDISE MENTIONNÉE DANS LE PRÉSENT CONNAISSANCEMENT.
IT IS AGREED BETWEEN THE PARTIES HERETO THAT INTEREST AT AN ANNUAL RATE OF 24% WILL BE CALCULATED ON ANY INVOICE UNPAID 30 DAYS AFTER DELIVERY OF THE GOODS MENTIONED IN THIS BILL OF LADING.

TPS/GST #105358238RT
TVQ/QST #1001513997

REÇU EN BON ÉTAT PAR : RECEIVED IN GOOD CONDITION BY

X

Sylvia Dugg

TRANSFÉRÉ PAR	P.U. PAR	BILL PAR	VOYAGE	TOTAL	\$
DATE LIV. / DEL. DATE	ARRIVÉE / TIME IN	DÉBUT / START	DÉPART / TIME OUT	LIVRÉ PAR / DEL. BY	
00000	JBERG	080			
2	4.15	945			

NOTEZ IMMÉDIATEMENT SUR LA FACTURE TOUT DOMMAGE OU Perte SINON LA SIGNATURE DU CONSIGNATAIRE CONSTITUERA UN REÇU FINAL ET AUCUNE RÉCLAMATION NE SERA ACCEPTÉE.
ANY LOSS OR DAMAGE MUST BE NOTED ON PROBILL AT TIME OF DELIVERY OTHERWISE CONSIGNEE'S SIGNATURE WILL CONSTITUTE CLEAR RECEIPT AND CLAIMS WILL NOT BE HONORED.

Le consignataire et/ou l'expéditeur conviennent avec la compagnie Transport Guy Bourassa Inc. qu'ils seront conjointement et solidairement responsables du paiement des frais de transport. • The consignee and the shipper agree with Transport Guy Bourassa Inc. that they will be jointly and severally responsible for the payment of all freight charges.

CLIENT 2



PACKING LIST

Packlist ID: 01292
Date: 3/25/2015
Page: 2

39 ENTERPRISE DRIVE
SUITE 2
WINDHAM, ME 04062
PHONE: 207-892-8899 FAX: 207-892-8863

Sold To Address

DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY K6A 1K7
CANADA

Ship To Address

DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY K6A 1K7
CANADA

			CUSTOMER PO		PAYMENT TERMS		F.O.B.	
			24911		Net 30		WINDHAM	
SALES REP ID			SHIPPING METHOD		SHIP DATE		OUR ORDER NUMBER	
EVAN			CUSTOMER TRUCK		3/25/2015		DAR140195	
QUANTITY								
ORD	SHP	BCK	CUSTOMER PART ID		DESCRIPTION			

56.00 30.00 26.00 D6021-125P

CROSSTUBE

Drawing:

Rev No:

Unit of Measure: EA

20 PIECES OF THI SUPPLIED 17-4 PH MATERIAL.

S/N(S): B9C, B9C2, B9D, B9D2, B9E, B9E2, B9F, B9F2, B9X,
B9X2, T9B, T9B2, T9C, T9C2, T9D, T9D2, T9E, T9E2, T9F,
T9F2.

RE: THI WO#: 141016/02

10 PIECES OF THI SUPPLIED 17-4 PH MATERIAL.

S/N(S): T8B2, T8C2, T8D2, B8D, B8C2, B8D2, B8E2, B8X,
T8B, T8F

RE: THI WO# 141016/03

THANK YOU FOR THIS ORDER.

CROSSTUBE MATERIAL 17-4PH, MANUFACTURE PER
DRAWING D6021 REV.PA5.

PROCUREMENT QUALITY CLAUSES:

A005 RIGHT OF ENTRY

A009 FIRST ARTICLE INSPECTION (FAI) BY DART
AEROSPACE AT SELLER'S FACILITY

A012 CHEMICAL AND PHYSICAL TEST REPORTS

A016 PERSONNEL QUALIFICATION

A020 NON-DESTRUCTIVE TEST/INSPECTION
IDENTIFICATION

A025 CERTIFICATE OF CONFORMANCE

A040 NOTIFICATION OF QUALITY ESCAPE

RECEIVED BY: _____



PACKING LIST

Packlist ID: 01294
Date: 3/26/2015
Page: 2

39 ENTERPRISE DRIVE
SUITE 2
WINDHAM, ME 04062
PHONE: 207-892-8899 FAX: 207-892-8863

Sold To Address

DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY K6A 1K7
CANADA

Ship To Address

DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY K6A 1K7
CANADA

CUSTOMER PO			PAYMENT TERMS		F.O.B.
24911			Net 30		WINDHAM
SALES REP ID		SHIPPING METHOD		SHIP DATE	OUR ORDER NUMBER
EVAN		CUSTOMER TRUCK		3/26/2015	DAR140195
QUANTITY					
ORD	SHF	BCK	CUSTOMER PART ID	DESCRIPTION	

56.00 8.00 18.00 D6021-125P

CROSSTUBE
Drawing:
Rev No:
Unit of Measure: EA

8 PIECES OF CUSTOMER SUPPLIED 17-4PH MATERIAL.

S/N(S): B8C, B8E, B8F, B8X2, T8C, T8E, T8E2, T8F2

THI WO# 141016/03

THANK YOU FOR THIS ORDER.

CROSSTUBE MATERIAL 17-4PH, MANUFACTURE PER
DRAWING D6021 REV.PA5.

PROCUREMENT QUALITY CLAUSES:
A005 RIGHT OF ENTRY
A009 FIRST ARTICLE INSPECTION (FAI) BY DART
AEROSPACE AT SELLER'S FACILITY
A012 CHEMICAL AND PHYSICAL TEST REPORTS
A016 PERSONNEL QUALIFICATION
A020 NON-DESTRUCTIVE TEST/INSPECTION
IDENTIFICATION
A025 CERTIFICATE OF CONFORMANCE
A040 NOTIFICATION OF QUALITY ESCAPE
A041 QUALITY MANAGEMENT SYSTEM
A042 DART NOTIFICATION BY SUPPLIER
A043 RETENTION OF QUALITY DOCUMENTS

RECEIVED BY: _____



39 ENTERPRISE DRIVE
SUITE 2
WINDHAM, ME 04062
PHONE: 207-892-8899 FAX: 207-892-8863

PACKING LIST

Packlist ID: 01292
Date: 3/25/2015
Page: 3

Sold To Address

DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY K6A 1K7
CANADA

Ship To Address

DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY K6A 1K7
CANADA

			CUSTOMER PO		PAYMENT TERMS		F.O.B.	
			24911		Net 30		WINDHAM	
SALES REP ID			SHIPPING METHOD		SHIP DATE		OUR ORDER NUMBER	
EVAN			CUSTOMER TRUCK		3/25/2015		DAR140195	
QUANTITY								
ORD	SHF	BCK	CUSTOMER PART ID		DESCRIPTION			

A041 QUALITY MANAGEMENT SYSTEM
A042 DART NOTIFICATION BY SUPPLIER
A043 RETENTION OF QUALITY DOCUMENTS

RECEIVED BY: _____



STATEMENT OF CONFORMANCE

Dart Aerospace Ltd.
1270 Aberdeen
Hawkesbury, ON K6A 1K7

Part #: D6021-125P
Material: 17-4 PH
Report #: 5083140
Heat #: 053380
Drawing #: D6021 Rev. PA5
P.O #: PO24911 L/I 2
THI WO#: 141016/02
Qty: 20

SP 15-046

SN: B9C, B9C2, B9D, B9D2, B9E, B9E2, B9F, B9F2, B9X, B9X2
T9B, T9B2, T9C, T9C2, T9D, T9D2, T9E, T9E2, T9F, T9F2

The above-mentioned parts have been inspected and conform to customer contract, purchase order, drawing, and other required specifications. All exceptions are noted below. Inspection data and all certifications are kept on file and available for review upon customer request.

Comments: This is a partial shipment under this P.O.

Inspected / Certified By: Tom Bowker

Tom Bowker, Quality Dept. March 23, 2015

**VALBRUNA**SLATER STAINLESS, INC.
2400 TAYLOR STREET WEST - PO BOX 630
FORT WAYNE IN 46802 USA
PHONE 260.434.2800 - FAX 260.434.2801**Product Certification Report**Report Number: **5083140**

Certified on Dec 04, 2014 Page 1 of 2

Order I.D. 1402065 001		Order Date 7/31/14		Commodity Code	
Dim 1 2.5000	Dim 2 .0000	Dim 3 .0000	Heat I.D. 053380	Customer I.D. 001417	Customer Purchase Order P011200
Product Shape Rounds			Product Surface HR & Rough Turned		Customer Grade 17-4
Length (Inches) 132.000 Min. 156.000 Max.			Bill of Lading # 423604	Weight	

Ship To

Attention: Penn Stainless Prod
Tube Hollows International
39 Enterprise Dr.
Suite 2
Windham, ME 04062

Sold To

VALBRUNA STAINLESS, INC.
2400 TAYLOR STREET WEST
FORT WAYNE, IN 46802

Lifts: 0027 0028 0029

Condition H-1025 /

ASTMA 564-13

MS-17-4H1025

CHEMICAL ANALYSIS

C	Mn	P	S	Si	Cr	Ni	Mo	Cu	N	Cb	Ta	Cb+Ta
.038	.49	.022	.024	.43	15.74	4.50	.25	3.31	.03	.25	.010	.260

ROCKWELL HARDNESS ASTM E18-14

HRC

35.0

TENSILE PROPERTIES ASTM E8-13a

TS (PSI)	.2%YS (PSI)	%EL(2")	%RA
165100	156000	20.2	58.6

CHARPY V NOTCH E23-12c

TEMP	FT/LB	FT/LB	FT/LB	LAT EX	LAT EX	LAT EX	AVG FT LB	AVG LAT EX
70	63	61	69	21	33	28	64	27

TEST(F)
70

MAGNETIC PARTICLE TEST AMS2303

FREQ SEV

AVG .00 .00

PRODUCTION HEAT TREATMENT

SOL-ANN(F)	SOL-ANN(HR)	QUENCH	AGE(F)	AGE(HR)	QUENCH
1900	6.00	Air	1025	4	Air

MACRO ASTM E340-13/E381-01

MACRO

OK

PERCENT FERRITE (AMS 2315)

% FERRITE Etchant Magnification X

AVG .0 Marbles 100

ULTRASONIC TEST (ASTM A388)

OK

Free of mercury and low melting alloy contamination.

No welding or weld repair done.

Tensile specimen size .505".

Reduction ratio exceeds 5 To 1.

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes. Including Federal law Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info. I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

email: DHackett@valbruna.us

Dennis Hackett

**VALBRUNA**

SLATER STAINLESS, INC.

2400 TAYLOR STREET WEST - PO BOX 630
FORT WAYNE IN 46802 USA
PHONE 260.434.2800 - FAX 260.434.2801**Product Certification Report**Report Number: **5083140**

Certified on Dec 04, 2014 Page 2 of 2

Order I.D. 1402065 001		Order Date 7/31/14		Commodity Code	
Dim 1 2.5000	Dim 2 .0000	Dim 3 .0000	Heat I.D. 053380	Customer I.D. 001417	Customer Purchase Order P011200
Product Shape Rounds			Product Surface HR & Rough Turned		Customer Grade 17-4
Length (Inches) 132.000 Min. 156.000 Max.			Bill of Lading # 423604	Weight	

**Ship
To****Attention: Penn Stainless Prod
Tube Hollows International
39 Enterprise Dr.
Suite 2
Windham, ME 04062****Sold
To****VALBRUNA STAINLESS, INC.
2400 TAYLOR STREET WEST
FORT WAYNE, IN 46802**

Specimen tested at longitudinal, mid-radius, room temperature.

Ultrasonic tested to ASTM A388 - Satisfactory.

Melted in Italy per DFARS clause 225.872-1.

Chemical testing to one or more of the listed ASTM methods:

E415-14, E1019-11, E1086-14.

Location of tensile fracture: inside middle of gage length.

No mercury or low melting alloy contamination. No weld repair.

Material melted and manufactured in the United States.

Material conforms to listed specifications and is DFARS compliant.

Quality system is compliant with ISO 9001:2008. Produced in accordance with EN 10204 3.1.

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes. Including Federal law Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info. I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

email: DHackett@valbruna.us

Dennis Hackett



STATEMENT OF CONFORMANCE

Dart Aerospace Ltd.
1270 Aberdeen
Hawkesbury, ON K6A 1K7

Part #: D6021-125P
Material: 17-4 PH
Report #: 5083150
Heat #: 053468
Drawing #: D6021 Rev. PA5
P.O #: PO24911 L/1 2
THI WO#: 141016/03
Qty: 8 pcs

SAS-AL-6.

SN: B8C, B8E, B8F, B8X2, T8C, T8E, T8E2, T8F2,

The above-mentioned parts have been inspected and conform to customer contract, purchase order, drawing, and other required specifications. All exceptions are noted below. Inspection data and all certifications are kept on file and available for review upon customer request.

Comments: This is a partial shipment under this P.O.

Inspected / Certified By:

Tom Bowker

Tom Bowker,

Quality Dept.

March 26, 2015



STATEMENT OF CONFORMANCE

Dart Aerospace Ltd.
1270 Aberdeen
Hawkesbury, ON K6A 1K7

Part #: D6021-125P
Material: 17-4 PH
Report #: 5083150
Heat #: 053468
Drawing #: ~~D6021~~ Rev. PA5
P.O #: PO24911 L/I 2
THI WO#: 141016/03
Qty: 10

SN: T8B2, T8C2, T8D2, B8D, B8C2, B8D2, B8E2, B8X, T8B, T8F

The above-mentioned parts have been inspected and conform to customer contract, purchase order, drawing, and other required specifications. All exceptions are noted below. Inspection data and all certifications are kept on file and available for review upon customer request.

Comments: This is a partial shipment under this P.O.

Inspected / Certified By:

Tom Bowker

Tom Bowker,

Quality Dept.

March 25, 2015

**VALBRUNA**

SLATER STAINLESS, INC.

2400 TAYLOR STREET WEST - PO BOX 630
FORT WAYNE IN 46802 USA
PHONE 260.434.2800 - FAX 260.434.2801**Product Certification Report**Report Number: **5083150**

Certified on Dec 04, 2014 Page 1 of 2

Order I.D. 1402065 001		Order Date 7/31/14		Commodity Code	
Dim 1 2.5000	Dim 2 .0000	Dim 3 .0000	Heat I.D. 053468	Customer I.D. 001417	Customer Purchase Order P011200
Product Shape Rounds			Product Surface HR & Rough Turned		Customer Grade 17-4
Length (Inches) 132.000 Min. 156.000 Max.			Bill of Lading # 423604	Weight	

Ship To

Attention: Penn Stainless Prod
Tube Hollows International
39 Enterprise Dr.
Suite 2
Windham, ME 04062

Sold To

VALBRUNA STAINLESS, INC.
2400 TAYLOR STREET WEST
FORT WAYNE, IN 46802

Lifts: 0034 0035

Condition H-1025

ASTMA 564-13

MS-17-4H1025

CHEMICAL ANALYSIS

C	Mn	P	S	Si	Cr	Ni	Mo	Cu	N	Cb	Ta	Cb+Ta
.035	.64	.027	.025	.43	15.66	4.37	.25	3.26	.04	.26	.010	.270

ROCKWELL HARDNESS ASTM E18-14

HRC

35.0

TENSILE PROPERTIES ASTM E8-13a

TS (PSI)	.2%YS (PSI)	%EL(2")	%RA
161100	150100	21.0	59.4

CHARPY V NOTCH E23-12c

TEMP	FT/LB	FT/LB	FT/LB	LAT EX	LAT EX	LAT EX	AVG FT LB	AVG LAT EX
70	86	78	79	32	40	33	81	35

TEST(F)

70

MAGNETIC PARTICLE TEST AMS2303

FREQ SEV

AVG .00 .00

PRODUCTION HEAT TREATMENT

SOL-ANN(F)	SOL-ANN(HR)	QUENCH	AGE(F)	AGE(HR)	QUENCH
1900	6.00	Air	1025	4	Air

MACRO ASTM E340-13/E381-01

MACRO

OK

PERCENT FERRITE (AMS 2315)

% FERRITE Etchant Magnification X

AVG .3 Marbles 100

ULTRASONIC TEST (ASTM A388)

OK

Free of mercury and low melting alloy contamination.

No welding or weld repair done.

Tensile specimen size .505".

Reduction ratio exceeds 5 To 1.

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes. Including Federal law Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info. I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

email: DHackett@valbruna.us

Dennis Hackett

**VALBRUNA****SLATER STAINLESS, INC.**2400 TAYLOR STREET WEST - PO BOX 630
FORT WAYNE IN 46802 USA
PHONE 260.434.2800 - FAX 260.434.2801**Product Certification Report****Report Number: 5083150****Certified on Dec 04, 2014 Page 2 of 2**

Order I.D. 1402065 001		Order Date 7/31/14		Commodity Code	
Dim 1 2.5000	Dim 2 .0000	Dim 3 .0000	Heat I.D. 053468	Customer I.D. 001417	Customer Purchase Order P011200
Product Shape Rounds			Product Surface HR & Rough Turned		Customer Grade 17-4
Length (Inches) 132.000 Min. 156.000 Max.			Bill of Lading # 423604	Weight	

**Ship
To****Attention: Penn Stainless Prod
Tube Hollows International
39 Enterprise Dr.
Suite 2
Windham, ME 04062****Sold
To****VALBRUNA STAINLESS, INC.
2400 TAYLOR STREET WEST
FORT WAYNE, IN 46802**

Specimen tested at longitudinal, mid-radius, room temperature.

Ultrasonic tested to ASTM A388 - Satisfactory.

Melted in Italy per DFARS clause 225.872-1.

Chemical testing to one or more of the listed ASTM methods:

E415-14, E1019-11, E1086-14.

Location of tensile fracture: inside middle of gage length.

No mercury or low melting alloy contamination. No weld repair.

Material melted and manufactured in the United States.

Material conforms to listed specifications and is DFARS compliant.

Quality system is compliant with ISO 9001:2008. Produced in accordance with EN 10204 3.1.

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Manager Laboratory Services



email: DHackett@valbruna.us

Dennis Hackett

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: D6021.125
 DATE: 15.04.13

PO / BATCH NO.: P024911 / 127272

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 38
 QUANTITY INSPECTED: 38
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .189
 THICKNESS RECEIVED: .189
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL	(Y) N	
CORRECT THICKNESS	(Y) N	
PHOTO REQUIRED	Y (N)	
CORRECT MATERIAL	(Y) N	
CORRECT REF # TO LINK CERT	(Y) N	M# 053463 / HT# 053380
CORRECT MATERIAL IDENTIFICATION	(Y) N	
CORRECT M# ON THE MATERIAL	(Y) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D	
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>DAS</u> <u>9</u> 9-89 DATE: <u>15.04.13</u>	SIGNED OFF BY: _____ DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in